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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/699,482

10/31/2003

Yong-Gi Kim

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EXAMINER

MADDEN, GREGORY VINCENT

ART UNIT

PAPER NUMBER

2622

MAIL DATE

DELIVERY MODE

07/27/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/699,482	Applicant(s) KIM ET AL.	
	Examiner Gregory V. Madden	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The declaration filed on May 25, 2007 under 37 CFR 1.131 is sufficient to overcome the Bateman reference (U.S. Pub. 2004/0075750).

As the declaration filed successfully overcomes the Bateman reference, the previous non-final rejection is hereby withdrawn. However, a new ground of rejection citing the Rabbani et al. reference (U.S. Pat. 6,885,395) will be used in place of the Bateman reference. Please refer to the new detailed non-final rejection to the claims set forth below.

Finally, the Examiner notes that the Applicant has amended claim 14 to depend from independent claim 11, as opposed to independent claim 1. This amendment thereby overcomes the previous objection to claim 14, and thus the objection to the claim is hereby withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7, 9, 11-13, 16, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Rabbani et al. (U.S. Pat. 6,885,395).

First, regarding claim 1, the Rabbani reference teaches a digital camera (digital camera 10) comprising a means for saving an additional digital image in a storage space (removable flash memory

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card 30) containing a stored digital image that has insufficient space for the additional digital image (i.e. remaining capacity of the memory card has reached a predetermined threshold), wherein the means reduces the size of the stored digital image by resetting one or both of the resolution and the compression ratio (i.e. changing the resolution and quality settings) of the stored digital image. Please refer to Figs. 2-3b, Col. 2, Line 61 – Col. 3, Line 12, and Col. 4, Line 22 – Col. 6, Line 67.

In regard to **claim 2**, the limitations of claim 1 are taught above, and Rabbani further teaches that mean means comprises an image signal processor (image processor 34) which compares the size of the storage space remaining in the storage space (30) with the size required for saving the additional digital image, as is taught again in Col. 2, Line 61 – Col. 3, Line 12, and Col. 4, Line 22 – Col. 6, Line 67.

As for **claim 3**, the limitations of claim 2 are taught above, and the Rabbani reference further discloses that the image signal processor (image processor 34) automatically changes one or both of the resolution and compression ratio (i.e. changes the resolution and/or quality settings) of the stored digital image when the size required for saving the additional image is larger than the size of the storage space remaining in the storage space. Please refer to Col. 5, Line 27 – Col. 6, Line 67.

Next, considering **claim 4**, the limitations of claim 3 are taught above, and Rabbani also teaches that the image signal processor (34) processes a signal containing digital image information (from ASP and A/D converter), as is shown in Fig. 2 and Col. 3, Lines 13-37.

Regarding **claim 5**, the limitations of claim 4 are taught above, and Rabbani also discloses that the image signal processor (34) sends the signal to a storage device (removable flash memory card 30), which stores the digital information. Please refer to Fig. 2 and Col. 3, Lines 13-53.

As for **claim 6**, again the limitations of claim 1 are set forth above, and the Rabbani reference teaches that the digital camera (10) further comprises a setting device (camera user interface 42) that allows a user to set the resolution and compression ratio (selected quality setting) for the signal processed by the image signal processor, as is taught in Col. 4, Lines 22-37.

In regard to **claim 7**, the limitations of claim 1 are taught above, and Rabbani also discloses that a control device (34) determines the amount of available memory in a storage space (memory card 30), calculates the amount of memory required for a single image at the current resolution and compression, and changes one or both of the resolution and compression ratio settings when the memory available in storage is less than the amount of memory required to store an image (See Col. 5, Lines 27-37).

As for **claim 9**, the limitations of claim 2 are taught above by Rabbani, and Rabbani also teaches that the image signal processor (34) comprises a digital signal processor in Col. 3, Lines 33-37.

Next, considering **claim 11**, Rabbani teaches a digital camera comprising an imaging means (image sensor 18) that takes a picture of a subject's image and generates an image signal, an image signal processing means (image processor 34) that performs predetermined conversion and compression processes on the image signal and generates digital image information, a storage means (removable flash memory card 30) that stores the digital image information, a setting means (camera user interface 42) that allows a user to set the resolution and compression ratio at which the image signal is processed by the image signal processing means, and a control means (control processor 22) that sends the resolution and compression ratio set by the setting means to the image signal processing means (34), wherein the image signal processing means changes one or both of the resolution and the compression ratio when the storage means has an insufficient space to store images. Again, please refer to Figs. 2-3b, Col. 2, Line 61 – Col. 3, Line 12, and Col. 4, Line 22 – Col. 6, Line 67.

Regarding **claim 12**, the limitations of claim 11 are taught above, and the Rabbani reference teaches that the image signal processing means (34) changes the compression ratio when the storage means has an insufficient space to store new images, as is taught in Col. 2, Line 61 – Col. 3, Line 12, and Col. 4, Line 22 – Col. 6, Line 67.

As for **claim 13**, again the limitations of claim 11 are taught above, and Rabbani also teaches that the image signal processing means changes the resolution compression ratio when the storage means has

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an insufficient space to store new images, again as is taught in Col. 2, Line 61 – Col. 3, Line 12, and Col. 4, Line 22 – Col. 6, Line 67.

Next, in regard to **claim 16**, the Rabbani reference discloses a method for saving images in a digital camera (10) comprising the steps of checking whether a free space for storing images remains on the storage means, checking a space required for storing one image at current resolution and compression ratio, comparing the size of the remaining storage space with that of the required storage space, entering a standby mode (i.e. entering the mode between memory space detection and “capture next image” mode) so that the images can be taken at the current resolution and compression ratio (quality setting) if the remaining storage space is larger than the required storage space, determining whether a new resolution and compression ratio is available at which an additional image can be stored on the remaining space if the required storage space is larger than the remaining storage space, determining and resetting the new resolution and compression ratio, and entering standby mode so that the additional image can be taken after automatically changing the current resolution and compression ratio to the new ones. Please refer again to Figs. 2-3b, Col. 2, Line 61 – Col. 3, Line 12, and Col. 4, Line 22 – Col. 6, Line 67.

Finally, considering **claim 18**, the limitations of claim 16 are taught above, and Rabbani further teaches in Col. 4, Lines 22 – Col. 5, Line 26 that the new resolution and the compression ratio are the highest possible resolution and the lowest possible compression ratio (i.e. highest possible quality) to the extent that an additional image can be saved on the remaining storage space.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 10, 14, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rabbani et al. (U.S. Pat. 6,885,395) in view of Aruga et al. (U.S. Pat. 6,429,896).

Considering **claim 8**, the limitations of claim 1 are taught above by the Rabbani reference, and while the Rabbani reference does teach that the digital camera contains a display means (image display 40) that displays various information about the image (See Col. 3, Line 63 – Col. 4, Line 2), but Rabbani fails to specifically disclose that information about the number of images remaining that can be stored on the storage means and resolution and compression ratio of the images saved on the storage means are displayed on the display means. However, the Aruga reference teaches a digital camera has an operating section having a display means (display section 4), wherein the display means displays information about the number of remaining images that can be stored on the storage means (4c in Fig. 4) and resolution and compression ratio of the images saved on the storage means (as shown in Figs. 6 and 7). Please also refer to Col. 5, Lines 24-36, and Col. 7, Lines 13-38. It would have been obvious to one of ordinary skill in the art to include the displaying of information regarding the number of remaining images on the storage means and the resolution and compression ratio information, as taught by Aruga, with the displaying of image information of Rabbani. One would have been motivated to do so because displaying the information such as the number of remaining images would allow the user to easily track the remaining storage capacity and make changes to the resolution and/or compression ratio settings if needed to increase the number of remaining images available in the storage means.

In regard to **claim 10**, the limitations of claim 7 are set forth above, but the Rabbani reference fails to specifically disclose that the control device comprises a microcontroller. However, the Aruga reference teaches that the control device (control unit 14 in Fig. 3) comprises a microcontroller, as is taught in Col. 3, Lines 42-45.

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Next, regarding **claim 14**, the limitations of claim 1 are taught above by the Rabbani reference, and while the Rabbani reference does teach that the digital camera contains a display means (image display 40) that displays various information about the image (See Col. 3, Line 63 – Col. 4, Line 2), Rabbani fails to specifically disclose that information about the number of images remaining that can be stored on the storage means and resolution and compression ratio of the images saved on the storage means are displayed on the display means. However, the Aruga reference teaches a digital camera has an operating section having a display means (display section 4), wherein the display means displays information about the number of remaining images that can be stored on the storage means (4c in Fig. 4) and resolution and compression ratio of the images saved on the storage means (as shown in Figs. 6 and 7). Please also refer to Col. 5, Lines 24-30, and Col. 7, Lines 13-38.

As for **claim 15**, the limitations of claim 14 are taught above, and the Aruga reference discloses that the display means (display section 4) is a display device that shows information about the image (such as resolution), as is taught in Col. 5, Lines 24-30, and Col. 7, Lines 13-38.

Finally, considering **claim 17**, the limitations of claim 16 are taught above by Rabbani, and while the Rabbani reference does teach that the digital camera contains a display device (image display 40) that displays various information about the image (See Col. 3, Line 63 – Col. 4, Line 2), Rabbani fails to specifically disclose the step of displaying information about the number of images remaining that can be stored on the storage means and resolution and compression ratio of the images saved on the storage means. However, the Aruga reference teaches a digital camera has an operating section having a display device (display section 4), wherein the display device displays information about the number of remaining images that can be stored on the storage means (4c in Fig. 4) and resolution and compression ratio of the images saved on the storage means (as shown in Figs. 6 and 7). Please also refer to Col. 5, Lines 24-30, and Col. 7, Lines 13-38.

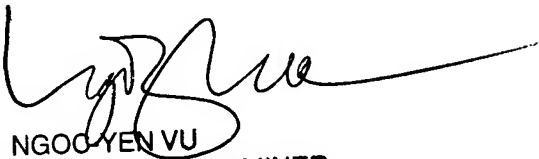
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory V. Madden whose telephone number is 571-272-8128. The examiner can normally be reached on Mon.-Fri. 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc Yen Vu can be reached on 571-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregory Madden
July 12, 2007


NGOC YEN VU
SUPERVISORY PATENT EXAMINER